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ABSTRACT

Research has shown that when peer tutoring is used as an instructional procedure, student test scores increase and failure is rare. Research has also shown that not only tutees gain academically but also that tutors tend to gain in both academic and social outcomes. Moreover, teachers can implement the technique efficiently and cost effectively. Variations of tutoring approaches manipulate the following three key variables: age, location, and ability level. Regardless of the form of tutoring, at its core is the principle of opportunity to respond. One model is classwide peer tutoring, which has proved effective in increasing the academic performance of students with mild disabilities both in general and self-contained classrooms. Classwide peer tutoring actively involves an entire class of varying ability levels and provides immediate feedback to all students simultaneously. Some of the strategies that help make peer tutoring work in the classroom are providing feedback, supervising, training tutors, and using the technique regularly. Some problems involved in implementing classwide peer tutoring include the need to settle minor disputes, check student point calculations, and develop student materials. Topics for future research are outlined. (21 references) (JDD)

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PEER TUTORING: WHEN WORKING TOGETHER IS BETTER THAN WORKING ALONE

Picture this...

> James, a fourth grader, is asking questions of Jermaine. Jermaine answers a question correctly. James responds to Jermaine with, "That's correct! Good answer." James and Jermaine are part of the "Heavy Metal" tutoring team in Mr. Barton's class. Three days a week, students representing two teams tutor each other on spelling words.
>
> In Ms. Wallace's math class, high school sophomores are sitting in pairs. The members of each pair are drilling each other on the new math facts. Janice, a student with learning disabilities, is paired with Dorleen, a general education student. After 20 minutes, Janice and Dorleen total their points. They add in the bonus points given to them by Ms. Wallace for demonstrating cooperative behaviors and transfer their points to the chart at the front of the room.

In classrooms each day, students are working together in peer tutoring arrangements to improve their learning. Overwhelmingly, the research has shown that when peer tutoring is used as an instructional procedure, student test scores increase and failure is rare. Moreover, teachers can implement the technique efficiently and cost effectively. Russell Osguthorpe, a researcher at Brigham Young University who has studied peer tutoring extensively, says, "The idea that kids with learning disabilities are losing something by peer tutoring is a myth. Peer tutoring is as beneficial as the classroom instruction."

Although peer tutoring has been used for years, in the last decade variations of it have been developed and researched with students who have special learning and behavior problems. Among the variations of peer tutoring is classwide peer tutoring, a classroom technique that actively engages all students in learning required skills through a peer tutoring format.

PEER TUTORING AS AN INSTRUCTIONAL METHOD

Over the years, student-mediated tutoring has taken many forms. Basically, it is an interchange between two students in which the tutor assists the tutee in learning content material. Variations of tutoring approaches manipulate the following three key variables:

Age
- Peer tutoring—The tutor and tutee are peers.
- Cross-age tutoring—The tutor is older than the tutee.

Location
- Classwide tutoring—Tutoring takes place within the classroom, with all students participating.
- Pull-out tutoring—Tutoring occurs outside of the classroom or with only one or a few students off to the side of the classroom.

Ability Level
- Reverse-role tutoring—The student who typically has difficulty serves as tutor to the more able tutee.
- Tutor as expert—The tutor has mastered the content that the tutee is being tutored on or the tutor is functioning at a higher ability level.

The particular combination of these variables will affect outcomes. For example, Eiserman, Shisler, and Osguthorpe (1987) concluded after a 3-year study that greater social benefits are likely to come with peer tutoring than with cross-age tutoring. Scruggs and Osguthorpe (1985), in their study comparing the outcomes of cross-age and peer tutoring, found that while academic gains were observed in both configurations, only in the cross-age situation did tutors (elementary-aged students with learning disabilities and behavioral disorders) improve their attitudes toward school.

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THEORETICAL FOUNDATIONS

The literature on effective instruction documents that the amount of time actively engaged in academic responding is related to content covered and student achievement gains. Peer tutoring represents several principles of effective instruction including opportunity to respond, functionality of academic areas, and instructional procedures that facilitate responding (Beirne-Smith, 1991; Delquadri, Greenwood, Whorton, Carta, & Hall, 1986). Regardless of the form of tutoring, at its core is the principle of opportunity to respond.

> Opportunity to respond refers to the complex interaction that occurs between environmental factors (e.g., time allocated for instruction, curriculum, and teacher behavior) and levels of active student responding (e.g., reading aloud, writing, and academic talk). A convergence of empirical data indicates that students' academic performance is enhanced substantially when (a) they are provided with ample opportunities to respond to functional academic tasks and (b) they receive immediate feedback (both positive and corrective) regarding their performance. (Maheady, Sacca, & Harper, 1987, p. 108)

Nina Troutner, a learning specialist at Washington Elementary School, Mount Vernon, Washington, observes, "So many kids come from homes where it is not possible to read at home. [Reading to a partner] gives them more time to practice. They get immediate feedback from their partner and from the teacher."

THE BENEFITS OF BEING A TUTOR

Peer tutoring and cross-age tutoring have often been touted as effective ways to individualize instruction for learners with differing needs. In addition, research has shown not only that tutees gain academically (see for example Beirne-Smith, 1991; Carlton, Litton, & Zinkgraf, 1985) but also that tutors tend to gain in both academic and social outcomes (Scruggs & Richter, 1988).

Academic Outcomes. There is an old saying that "one who teaches learns." This statement is validated in the context of tutoring (Eiserman et al., 1987; Osguthorpe & Scruggs, 1986). Jenkins and Jenkins (1981) have advanced four plausible explanations to account for achievement gains by tutors:

- Tutoring affords an opportunity to learn new information.
- Tutoring is an occasion for students to review and relearn information or skills that they have either forgotten or on which their proficiency has diminished.
- Tutors may be more conscientious about their own classroom work because they want to keep their tutoring privileges.
- Tutoring may result in attitudinal changes that influence students' involvement in learning. (p. 22)

Social Outcomes. The effects of peer tutoring on social outcomes have also been studied. According to Conway and Gow (1988), when it is used as a group instructional method peer tutoring can facilitate mainstreaming. Research on reverse-role tutoring has shown that it can enhance positive attitudes toward students with disabilities (Shisler, Osguthorpe, & Eiserman, 1987), as well as increasing positive interactions between peers with disabilities and their nondisabled peers during free play (Osguthorpe, Eiserman, & Shisler, 1985). Additionally, peer tutoring has been found to increase positive interactions between nondisabled tutors and their tutees with autism (Haring, Breen, Pitts-Conway, Lee, & Gaylord-Ross, 1987). Joe Delquadri, who with his colleagues developed the classwide peer tutoring model, comments, "Tutoring helps kids learn more about each other, and the benefits go two ways. The gifted kids begin to understand the struggle of the students who are learning disabled, and in turn the unmotivated kids see how much hard work some of the high achievers actually do."

While the jury is still out on whether or not the tutor's self-esteem is enhanced by tutoring, there are some promising results:

- When junior-high-aged students with learning disabilities (who also happened to have problems with truancy and tardiness) tutored younger children, their problems with truancy and tardiness decreased and they showed an increase in internal locus of control (Lazerson, Foster, Brown, & Hummel, 1988).
- When students with learning disabilities, aged 9 to 12, tutored younger students in spelling, they demonstrated more positive social skills (Trapani, 1988).
- When elementary-aged students with behavioral disorders tutored youngsters with severe multiple disabilities on language skills, their self-perceptions improved (Scruggs, Mastropieri, Veit, & Osguthorpe, 1986).

"When students are actively engaged 90% of the time, it totally eliminates any inappropriate behavior," says Delquadri.

Over all, the academic and social effects of peer tutoring are positive when students with disabilities are included. Of course, as with any other approach, the effectiveness of this method relies on the appropriateness of the material and the teacher's care in setting up the program to meet student needs. Teresa Foley, an English teacher at Hammond Junior High in Alexandria, Virginia, comments, "I do a lot of research in the cafeteria and hallway before I ever put my students in groups. I can't do it without knowing who goes well with whom. I also use interest inventories and reading inventories to pair students."

CLASSWIDE PEER TUTORING

Traditionally, peer tutoring was thought of as an intervention for low-performing youngsters, often in a "pull-out" situation. In the last decade, practitioners and researchers have begun to extend this opportunity to *all* students in a class. One such model is classwide peer tutoring. Classwide peer tutoring has proved effective in increasing the academic performance of students with mild disabilities both in general and self-contained classrooms (Delquadri et al., 1986; Maheady et al., 1987, 1988).

Classwide peer tutoring answers two of the major questions facing classroom teachers: "How do we actively involve an entire class of varying ability levels in academic tasks?" and "How do we provide immediate feedback to all students simultaneously?" Using a team format, classwide peer tutoring systems incorporate a number of systematic instructional procedures such as

- an explicit presentation format
- active student responding
- contingent point earning
- systematic error correction strategies
- public posting of student performance. (Maheady et al., 1987, p. 108)

Although there are different variations of classwide peer tutoring, typically the program operates as follows. The class is divided into two learning teams. Within each team, students are then put into tutoring pairs. Students are informed that their task is to help their teammates learn the content—usually a worksheet with basic facts—given to them by the teacher. Students assume the roles of both tutor and tutee within their teams. They are informed that they will earn points each day for completing assignments and that they will compete against the other team in the classroom for the most points. Bonus points are awarded daily by the teacher for cooperative work habits.

Sessions last approximately 30 minutes and occur a minimum of 2 days per week. In Delquadri's model, students use the 30 minutes as follows: Tutor A tutors the tutee for 10 minutes. The tutee responds to the material and earns points for his or her team. The tutor awards points and corrects errors, also earning points for appropriate behaviors and correct responses. The roles are reversed during the next 10-minute interval. The final 10 minutes are used to tally points and report back to the group. Students keep track of their points and add them up at the end of each day (for a complete discussion of how points are earned see Delquadri et al., 1986). These points are posted in the classroom. After a minimum of two sessions, students individually complete a standard quiz. They earn team points for each correct answer. Following the quiz, points are totaled and a "Team of the Week" certificate is awarded.

According to Delquadri and his colleagues (1986), the key features that make this approach work include

- Selection of functional academic skill areas such as math facts, spelling word lists, and comprehension questions.
- Reinforcement of correct responding by setting up individual and group contingencies.
- Systematic review of the students' performance gains.
- Establishment of peer-mediated contingencies such as "Team of the Week" awards (public posting of performance).

STEPS TO ESTABLISHING A SOLID PROGRAM

Teachers who are veteran users of peer tutoring systems say that students love it and it works wonderfully. But they are also quick to point out that, like any other instructional approach, peer tutoring is not without drawbacks. Following are some of the strategies that help make the approach work in the classroom.

Provide Feedback. Positive feedback is a key ingredient in most peer tutoring programs; it keeps the students on task. Bethany Maheady, a third grade teacher at Dunkirk School #3 in

New York City, awards points to groups who are following the peer tutoring system well. "I put the winning team's name on the board and make certificates," she says, adding, "When positive feedback alone does not keep problems from arising, just changing partners often helps."

Supervise. Researchers have found that enough supervision needs to be given to ensure that students are kept on task and advance only after demonstrating mastery (Beirne-Smith, 1991; Eiserman, 1988). Moreover, teachers need to monitor students to stay on top of pupil progress (Jenkins & Jenkins, 1981). One suggestion, in addition to moving around the room during tutoring, is to have students keep track of their progress in a daily log (Eiserman & Osguthorpe, 1986).

Nina Troutner, who uses a peer tutoring system she describes as "very simple," has fifth and sixth graders tutor each other in reading by using trade paperbacks that they select. Troutner makes her expectations clear by walking about with a clipboard that lists the criteria of a good tutor. Some of the things she looks for and rewards with praise are good eye contact, taking turns, staying on task, and giving encouragement. Troutner advises, "Always be on top of the process. Check each tutoring pair constantly. You can't sit at your desk and check papers. Let the kids know what is expected. Give constant feedback and constant intervention."

Teresa Foley teaches junior high English to students with behavior disorders. Monitoring often means reminding her students to hold back and to be careful how they criticize. When problems arise, she often uses the situation as a "teachable moment." "I'll play the role of a passive student and have an aggressive student be my tutor. Sometimes they get on a roll and can really chop up someone's paper. I tell them to treat others as they want to be treated."

Train Tutors. Training is essential to ensuring a successful program. Research has shown that success is enhanced when tutors are acquainted with their overall responsibilities, how to properly reinforce correct responses, how to properly correct incorrect responses, and general guidelines for the tutoring program (Lazerson et al., 1988). In a structured peer tutoring system such as the one used in Carol Bleck's high school social studies class at Dunkirk High School in New York, the students may need a solid week of training. Training entails modeling in front of the class, first by the teacher with a student, then by groups of students.

In Teresa Foley's classwide peer tutoring sessions, teaching students how to be sensitive is also an important skill. For Foley, this means that students:

- Accept constructive criticism without becoming angry or withdrawn.
- Provide constructive criticism in an appropriate manner.
- Verbalize what they mean so that they are understood.
- Do not fabricate facts (e.g., telling a peer that a sentence is not a sentence when in fact it is).

Use Regularly. According to teachers, regular use of the peer tutoring system is also essential. Most teachers have their students work together two to four times a week. This routine keeps students familiar with the system. But with any routine, boredom will result if there is no variety. Teachers suggest taking a break from the system at report card time or changing partners or teams regularly.

General Considerations. Researchers have documented a number of considerations for teachers when setting up peer tutoring programs. They have learned the following from successful practitioners:

- When working with a student with learning disabilities, it is best to provide that student with a stable role in the tutoring relationship, rather than one that varies daily (Eiserman, 1988).
- After a period of time (approximately 6 weeks), students should be allowed to switch tutoring partners (Eiserman, 1988).
- To be successful, tutoring sessions do not need to occur daily for approximately half-hour sessions, although that is preferred; but they do need to occur routinely (Jenkins & Jenkins, 1981). Effective tutoring programs tend to show positive results with as few as 10 total hours of tutor-tutee contact (Osguthorpe & Scruggs, 1986).
- Tutoring materials must be effective (Osguthorpe & Scruggs, 1986).

Over all, peer tutoring does not require a drastic change in the structure of most classrooms, nor does it require teachers to totally revamp their present teaching styles. Rather, teachers can, with little disruption to their routine, extend their repertoire of instructional strategies to include peer tutoring.

By all accounts, peer tutoring programs are cost effective and an efficient use of learning time. Furthermore, students *enjoy* the opportunity to interact with their peers and become actively engaged in the learning process. According to researcher Larry Maheady, consumer satisfaction surveys reveal that a whopping 90 to 95% of both students and teachers prefer classwide peer tutoring to the more traditional classroom procedures. Ann Lowe, an itinerant learning specialist in the Turner School District in Kansas, is enthusiastic about peer tutoring: "I've never seen anything better to get kids on task. The kids get used to it sooner than the teachers. They like the structure."

TIPS FOR HANDLING COMMON PROBLEMS

Although the system is relatively trouble free, teachers have identified some problems when implementing classwide peer tutoring. Larry Maheady and his colleagues (Maheady & Harper, 1987; Maheady et al., 1988) have suggested handling some of the most typical problems in the following ways.

- ***Settling Minor Disputes.*** No matter how much training and care go into setting up a classwide peer tutoring program, occasional negative social interactions are inevitable. Teachers can handle these outbursts by awarding bonus points to tutoring pairs in the general vicinity of the disputing pair who are not engaging in arguments.
- ***Point Totaling.*** Although most students tend to be honest and conscientious in keeping track of their points, occasionally students will miscalculate points. To keep students on their toes, teachers can randomly schedule "surprise days" when they check students' point totals and award bonus points to students who total points correctly.
- ***Materials Development Demands.*** Initially, teachers will need to develop materials for use by students. While this can be time consuming, materials can be used again with future groups if they are properly filed. Bethany Maheady comments, "Initially you have to put in extra work making up quizzes or questions, but after you get started you find that it doesn't require a lot of preparation. I can use my material from year to year."

NEW APPROACHES TO PEER TUTORING

The majority of teachers who receive training in peer tutoring approaches and who actually implement the system in their classroom continue using it successfully throughout the school year. This success with peer tutoring keeps researchers busy trying to find answers to practical questions and better ways to implement the tutoring models. According to researchers Joe Jenkins, Larry Maheady, and Thomas Scruggs, one of the issues that still needs to be studied is how peer tutoring affects achievement scores over time. Teachers claim that peer tutoring helps prepare their students with special needs for class assignments; they note that in many cases, test scores for these students have been raised significantly. However, more study is needed to determine how these gains translate into other modes of achievement: retention rates, referral to mainstream classrooms, and SAT scores.

Another topic for future research involves the type of material that students cover in classwide peer tutoring sessions. "We know that kids can teach factual material to other kids," says Maheady. "What we need to look at is how well they can help each other with higher order skills such as analytical problem solving or memory strategies."

For researchers Joe Delquadri, Larry Maheady, and Russell Osguthorpe, there are still many unanswered questions about the social effects of peer tutoring. Various studies show that peer tutoring helps to erase some of the negative attitudes that different groups have toward each other. However, as with academic gains, more research needs to be done on the depth and permanence of these social effects. Osguthorpe made an important point when he questioned the use of team competition and public posting of student performance in the context of using classwide peer tutoring with students with special needs: "I'm sure that competitive techniques are motivating to some students, but there is a clear danger, especially regarding students with disabilities, in emphasizing student-to-student or team-to-team comparisons." (For information on a new approach, companion tutoring, which incorporates many characteristics of classwide peer tutoring without the competitive aspects, see Goodlad and Hirst, 1990.)

The issue of self-esteem also raises many questions; specifically, "Does peer tutoring improve the tutor's self concept?" While anecdotal data suggest that peer tutoring does have this effect, standardized measures do not bear this out. More study is needed to determine the affective benefits of peer tutoring approaches.

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